

## **GMR Sensor with Oriented Hard Bias Stabilization**

### **Abstract**

5           Magnetic data storage devices use read/write heads to transfer data between the magnetic  
storage medium and the rest of the system. The read head is constructed with a magnetic layer  
called a free layer whose magnetic axis rotates based upon external magnetic influences of the  
magnetic storage medium. The free layer is biased into a predetermined magnetic orientation  
with the magnetic influence of a layer called a hard bias layer. Orientation of magnetic axes  
10 within the hard bias layer is desired. This document describes a hard bias layer whose  
magnetization exhibits uniaxial magnetic anisotropy.